General Geology
Exit Competencies
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Introductory Geology is a valuable tool for teaching the nature of science and how science advances given that the change in paradigm is well-known (for example, plate tectonics) and the relationship between progress in science and invention of new technologies is clear (for example, seismology). However, while the use of a geology course for teaching the nature of science necessitates teaching some basic geologic concepts, this approach greatly minimizes the required learning of specific, detailed subtopics within geosciences. The basic geologic concepts that are essential to understanding the nature of science as taught in geology are:

A. Tectonics
    1. Be familiar with the evidence leading to the Theory of Plate Tectonics
    2. Be able to describe the interior structure of the earth
    3. Be able to apply the relationship of the Theory of Plate Tectonics to earthquakes, volcanoes, mountain building, etc.
    4. Be able to recognize geologic structures produced by tectonic forces

B. Earth Materials
    1. Be able to describe the processes involved in the Rock Cycle
    2. Understand the process of mineral identification
    3. Understand the process of rock identification (e.g. composition and texture)

C. Surface Processes
    1. Be able to describe the various processes in the decomposition of rock
    2. Be able to describe how materials are eroded and transported (e.g. by water, wind, ice, gravity)
    3. Explain how erosion and transportation produce and/or modify landforms
    4. Understand the processes associated with deposition
    5. Describe the interaction between surface water and groundwater
    6. Evaluate the earth-human interaction

D. Geologic Time
    1. Be able to recognize major earth events in the framework of geologic time
    2. Differentiate between absolute and relative dating
    3. Describe and apply the principle of uniformitarianism
    4. Appreciate the contribution of faunal succession and stratigraphic correlation to the development of the geologic time scale